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Analog Devices' Plug-and-Play Antenna Chip Simplifies Phased Array Radar for Avionics and Communications Equipment Designers

NORWOOD, Mass.--(BUSINESS WIRE)-- [Analog Devices, Inc.](http://www.analog.com) (ADI) today introduced a highly integrated, active antenna beamforming chip that allows designers to quickly replace bulky, mechanically steered antenna platforms with a compact, solid-state solution for phased array radar and communications systems. The ADAR1000 chip simplifies design and significantly reduces the size, weight and power of phased array radar systems for defense, surveillance, air traffic control, communications and weather monitoring. For avionics designers, the ADAR1000 enables flat-panel antenna arrays, which shrinks the profile of conventional radar systems and facilitates the design of smaller, lighter aircraft. The new ADAR1000 is a plug-and-play chip that allows designers with little or no RF experience to extend the performance and operating lifetime of their radar systems.

This press release features multimedia. View the full release here:

<https://www.businesswire.com/news/home/20180516005004/en/>



- | View ADAR1000 product page, download data sheet, order samples and evaluation boards: <http://www.analog.com/adar1000>
- | Learn more about ADI's phased-array radar solutions: <http://www.analog.com/phasedarray>
- | Connect with engineers and ADI product experts on EngineerZone®, an online technical support

Analog Devices' Plug-and-Play Antenna Chip Simplifies Phased Array Radar for Avionics and Communications Equipment Designers (Graphic: Business Wire) community: <http://ez.analog.com/community/rf>

The 4-channel ADAR1000 active antenna beamforming chip replaces 12 discrete components needed for antenna phase-gain adjustments and digital controls. The IC supports time division duplexing (TDD) across the X and Ku bands. It includes an integrated T/R switch that can be used to select the common port as an input for transmit (Tx) or an output for receive (Rx). The four pairs of Tx and Rx channels have independently programmable gain and phase settings. The ADAR1000 can be configured to directly control all aspects of external T/R module pulsing with minimal extra circuitry. All settings can be loaded into built-in memory for fast access to gain-phase states and T/R module settings. The ADAR1000 offers a scalable building block for fast implementation of active antenna phased arrays targeting next-generation radar and communications

systems without the need for extensive third-party design support.

"ADI is combining the industry's broadest RF portfolio with extensive design and packaging expertise to help customers quickly implement phased array antennas," said John Cowles, general manager of Analog Devices' RF and Microwave Business Unit. "Our new phased array offering is smaller, lighter, and as powerful as a typical phased array solution. It also increases potential uses for phased array as it significantly reduces the profile of the antenna."

ADAR1000 Active Antenna Beamforming Chip Product Features

- | 8-GHz to 16-GHz frequency range
- | Half-duplex TDD for Tx and Rx
- | Single-pin Tx/Rx control
- | Versatile T/R modules control modes
- | 360-degree phase control with less than 2.8-degree phase resolution
- | Greater than 31-dB gain control with 0.5-dB resolution
- | On-chip memory for pre-stored beam positions
- | Auxiliary 8-bit A/D converter for power detectors and temperature sensor
- | Support for low-power modes
- | 4-wire SPI interface

Product Pricing and Availability

Product	Sample Availability	Full Production	Price Each per 1,000	Packaging
ADAR1000	May 2018	June 2018	Contact ADI at adar1000@analog.com	7mm X 7mm LGA package
ADAR1000-EVALZ Evaluation Board	N/A	May 2018	Contact ADI at adar1000@analog.com	N/A

Analog Devices' RF and microwave portfolio provides the broadest capabilities in the industry coupled with deep system design expertise to support designs with complete signal chain capability, including RF, microwave and millimeter wave. Customers can choose from a broad selection of discrete components and integrated solutions, including a comprehensive antenna to bits portfolio for applications from DC to beyond 100 GHz. ADI offers the widest array of technologies, including CMOS, SiGe, BiCMOS, SOI, GaAs and GaN, for markets including communications, test and measurement instrumentation, industrial, and aerospace and defense.

About Analog Devices

Analog Devices (Nasdaq: ADI) is the leading global high-performance analog technology company dedicated to solving the toughest engineering challenges. We enable our customers to interpret the world around us by intelligently bridging the physical and digital with unmatched technologies that sense, measure, power, connect and interpret. Visit <http://www.analog.com>.

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